

# Interoperability in Public Safety Systems

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Emerging Technologies



**Homeland  
Security**

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ArdentMC support to FRG

# NIEM / EDXL & FRESH Router

- NIEM EMLC & EDXL are data standard specifications that allow for data to be delivered and understood across organizations
- NIEM EMLC & EDXL support resource management throughout the Mutual Aid timeline by providing first responders with the information they require when they require it
- The FRESH Router provides a message routing platform that utilizes NIEM EMLC & EDXL that enables sharing and viewing of information without the restrictions of proprietary applications or interfaces
- NIEM EMLC and FRESH support USNG

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# EDXL-DE and NIEM EMLC

## EDXL-DE

- Container for all messages
- Provides routing information
- OASIS approved standard
- Provides mechanism for standardized metadata (vocabulary / typing)

## NIEM EMLC

- One of many payloads for EDXL-DE
- Provides incident, resource, resource group, and infrastructure information
- Draft NIEM IEPD

# NIEM EMLC Approach

- Develop a common *base class*, apply the software engineering concepts of *encapsulation*, *polymorphism*, and *loose coupling* to provide a *simple*, *extensible*, and *hierarchical* data model.
- Base class contains very little, but offers the most critical and common elements:
  - What – Object type information – Resource, Observation, Tasking
  - Where – Geospatial information
  - When – Interval of time
  - Extension – Embeds the next level of detail

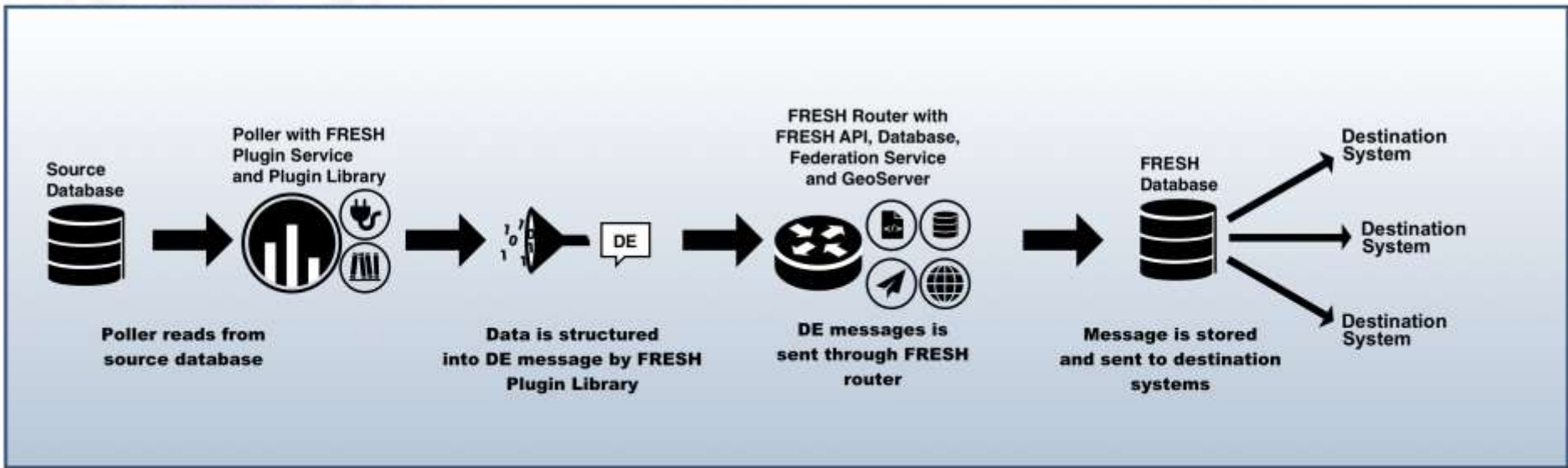
[REQUIRED]	
<b>EventID</b> An identifier of an event.	<b>EventLocation</b> The location of a process or object.
<b>EventMessageDateTime</b> The point in time at which this message was created.	<b>EventValidityDateTimeRange</b> The location of a process or object.
<b>EventTypeDescriptor</b> A container for the formal type code and the extended type code to specify what type of thing the EM events is describing.	
[OPTIONAL]	
<b>EventComment</b> Comments regarding a particular event.	<b>EventLink</b> A link to other EM events.
<b>USNGCoordinate</b> A coordinate from the United States National Grid (USNG) which represents a location using the Universal Transverse Mercator (UTM) and the UPS grid systems and a grid labeling convention. Similar to the MGRS grid.	
<b>IncidentDetail</b> Additional information needed to sufficiently describe an incident.	<b>ResourceDetail</b> Additional information needed to sufficiently describe a resource.
<b>EventCommunityExtension</b> A community-specific extension to a message, for which the XML schema is not known in advance.	





# FRESH SYSTEM OVERVIEW

# Homeland





# What is your agency/organization vision for how your MA Technology works with other systems?

- The NIEM EMLC / EDXL provides a standard data structure, lexicon, and vocabulary for sharing emergency management data between disparate systems. Adoption of this data standard will allow for greater interoperability and information sharing between emergency management IT systems.
- The FRESH Router will provide an open source toolset, API, and SDK to provide a platform for cross-organizational information sharing. This will enable more stakeholder IT systems and stakeholders to have the information they need in order to increase Situational Awareness and impact the Mutual Aid environment.



# Homeland Security

**DEMO**

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